
ST. HELENA NATURAL TREASURY

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THE ZOOLOGY OF ST. HELENA



ÆGIALITIS SANCTÆ-HELENÆ

The Wirebird, *Charadrius sanctaehelenae*, a species unique to St. Helena.

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INTRODUCTION

St. Helena's original terrestrial fauna consisted only of birds and invertebrates. Both groups gave rise to unique and unusual forms due to the island's remote situation. The variety of fascinating species has been enhanced by this isolation and the lack of competition from other animal groups, particularly as there are no indigenous mammals. This situation is comparable with that found on other oceanic islands, such as the somewhat better studied Galapagos group. Of course, the subsequent introduction of alien species accompanying the arrival of man has had a dramatic effect upon the endemic flora and fauna. This all too familiar occurrence has caused the disappearance of many species, and others are still threatened with extinction.

The following papers outline some of the interesting aspects of the animal life of St. Helena, including some information on the aquatic fauna. Little field research has been carried out on the zoology of St. Helena, and there is much scope for further study.

FUTURE PALEONTOLOGICAL POTENTIAL OF ST. HELENA (Olson)

As with almost all islands, the biological history of St. Helena subsequent to its discovery and colonisation by *Homo sapiens*, has been a nearly unmitigated disaster. A full appreciation of the extent of the destruction caused by habitat loss and the effects of introduced mammals may be gained only through the fossil record. Fortunately, however, the fossil record of St. Helena is quite good, at least for birds and also perhaps for land snails. Although a few fossils were collected in the last century, the real impetus for a paleontological reconnaissance of the island came from the preliminary findings of Ashmole (1963) made during the Ascension Island Centenary Expedition of the British Ornithologists' Union in 1958 and 1959. This led to my survey of the island for fossils in June and July 1971, which resulted in the collection of over 3,000 specimens from several very different localities ranging in age from perhaps mid-Pleistocene to late Holocene (Olson, 1975).

Among the fossil collections were 8 new, presumably endemic, species (Wetmore, 1963; Olson, 1973; 1975), and bones of at least 4 other breeding species of seabirds that have been extirpated from the island. The new species include two petrels, *Pterodroma rupinarum* and *Bulweria bifax*, thought to be related to the *P. rostrata* group and *Bulweria fallax*, respectively, and a shearwater, *Puffinus pacificoides*, which, as the name implies, belongs with *P. pacificus*/*P. bulleri*, a group now absent in the Atlantic. There were also two species of flightless rails, "*Aphanocrex*" *podarces*, a large relative of *Rallus*, and *Porzana astrictocarpus*, a derivative of the widespread Marsh Crake *P. pusilla*. Among the more enigmatic forms were a new genus and species of dove, *Dysmoropelia dekarchiskos*, and a new genus and species of cuckoo, *Nannococcyx psix*. Perhaps the most intriguing of all was a very distinct species of hoopoe, *Upupa antaios*, larger than *U. epops* but with markedly smaller wings. Extirpated breeding populations of seabirds include the White-faced Storm-Petrel (*Pelagodroma marina*), Audubon's Shearwater (*Puffinus lherminieri*), and two species of frigatebirds (*Fegata minor* and *F. ariel*).

From their absence in all but the oldest deposit, the dove and *Puffinus pacificoides* are assumed to have become extinct naturally before the arrival of man. All of the other species, however, were probably present when the island was discovered in 1502, after which they quickly succumbed to the effects of predation by man, rats, cats, dogs, and pigs, and deforestation caused by woodcutting, burning, goats, and cattle.

To my knowledge, there has been no further paleontological research on St. Helena since my visit in 1971, nor any significant additions to the literature of the subject, apart from Walker's (1977) historically interesting rediscovery of two small 19th century collections of

bird bones in the British Museum. These added no new elements to the previously known fauna, however.

There is a great deal that could potentially be added to our knowledge of the extinct birds of St. Helena by further paleontological work. My collecting on the island took place at an early stage in my career, when my principal interest was in the endemic land birds. Although I collected every bone I encountered, it was only later that the significance of some of the seabirds became apparent, otherwise I should have made a more concerted effort to investigate them further. The deposits are far from depleted and there can be little doubt that, with nearly 20 subsequent years of erosion, many more bones must have been exposed in the rich sediments in Prosperous Bay Valley and in the Pleistocene sands at Sugar Loaf.

St. Helena was mainly forested before the arrival of man, yet truly arboreal species of birds are all but absent from the fossil collections made so far. It would be expected that small arboreal birds would fossilize less frequently than large terrestrial species or burrowing seabirds. The only indication so far is a very fragmentary humerus that I attributed to a small cuckoo. I did not collect this specimen but found it among the material sent by Arthur Loveridge to the Museum of Comparative Zoology at Harvard University. Thus, I was unaware of such a bird when I was collecting on the island. I would not now be inclined to name such a specimen, but it nevertheless "definitely represents an unknown element in the avifauna of St. Helena" (Olson 1975:31). If indeed a cuckoo was present on St. Helena it was presumably a brood parasite, but upon what? In view of the variety of other landbirds that successfully colonized the island, it seems unlikely that no passerines ever did so, yet no fossils of Passeriformes have surfaced so far. A more intensive collecting effort involving the use of screens, especially at Prosperous Bay, would be very likely to add new species to the island's list as well as revealing more of the true nature of *Nannococcyx*.

Additional fossils of other species would be of crucial interest in certain instances. For example, no cranial material is known for the petrel I named *Bulweria bifax*. Although there is no doubt that this is a valid, extinct species, its assignment to the genus *Bulweria*, as opposed to *Pterodroma*, was predicated on rather subtle postcranial differences, whereas a skull would clarify the generic affinities of the species beyond question.

The identity of the smaller of the two frigate-birds from St. Helena remains very much in doubt and a larger series of specimens could only help in the eventual resolution of its status. It is possible that this may represent an undescribed species. More material of the larger rail "*Aphanocrex*" *podarces* would clarify points concerning its morphology and relationships, the rostrum, mandible, sternum, and pelvis being as yet unknown. Relatively few skeletal elements of the endemic dove *Dysmoropelia* were ever recovered and more are needed for determining its adaptations and systematics. Not being familiar with the conchological literature, I don't know whether any advances have been made regarding the land snails of St. Helena since the days of Wollaston (1878). Virtually all of these snails, including some quite striking species, are now extinct and any further paleontological reconnaissance of the island should include the collection of pulmonate shells.

It is sad to reflect how much has been lost from St. Helena, but we are fortunate that at least birds and snails have hard parts that are preserved as fossils. From such remains we can reconstruct some of the former diversity of the island, whereas botanists and entomologists, for example, would have few, if any, such opportunities on most oceanic islands. With so much more still to be learnt, the natural treasury of fossils on St. Helena deserves to be more fully exploited. For in this case, not to collect specimens means only that they will be disintegrated by sun and rain or washed into the sea.

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